WHAT IS CLAIMED IS:

1. A handwriting recognition method, comprising the steps of:

   1) calculating corresponding 3D coordinates based on 3D motion data:

   2) constructing corresponding 3D tracks based on 3D coordinates;

   3) deriving 2D projection plane based on the 3D tracks which have been inputted; and

   4) generating 2D image for handwriting recognition by mapping the 3D tracks onto the 2D projection plane when the user inputs the rest of 3D motion data.

2. The method of claim 1, further comprising a step of generating 3D motion data by tracking corresponding 3D motion before step 1).

3. The method of claim 2, further comprising a step of adjusting the sampling rate dynamically based on the motion speed between the step of generating 3D motion data by tracking corresponding 3D motion and the step of calculating corresponding 3D coordinates based on 3D motion data.

4. The method of claim 1, further comprising a step of performing 2D handwriting recognition based on the 2D image after step 4).

5. The method of claim 1, wherein step 4) further comprising the steps of:

   A) finding out the distinguishable strokes based on the 3D tracks which have been inputted; and

B) deriving 2D projection plane based on the said distinguishable strokes or part of them.

6. The method of claim 5, wherein step A) comprising the steps of:

a) finding out two different strokes ; and

b) determining whether the average distance of the said two strokes is distinguishably qualified.

7. The method of claim 5, wherein step B) of deriving further comprising a step of deriving 2D projection plane as a plane to which the sum of the distance square of every sampling points is minimal.

8. The method of claim 5, wherein said distinguishable strokes in step B) is the first two distinguishable strokes .

9. The method of claim 6, wherein finding out two strokes in step a) is based on determining whether the motion direction of 3D tracks is changed.

10. The method of claim 6, wherein the average distance of said two distinguishable strokes in step b) is greater than a predetermined positive value.

11. The method of claim 7, wherein the step of deriving 2D projection plane as a plane to which the sum of the distance square of every sampling points is minimal can employ the LaGrange multiplication method.

12. The method of claim 9, wherein determining whether the motion direction is changed allows less than N_{min} consecutive points move in different direction from prior points, N_{min} is a predetermined natural number.

13. A handwriting recognition system, comprising:

an input device, including a 3D motion detection sensor to generate 3D motion data in response to 3D motion; and

a recognition device, in communication with the input device, to receive the 3D motion data, and derive the 2D images for handwriting recognition based on 3D motion data.

14. The system of claim 13, wherein the recognition device includes means for performing 2D handwriting recognition based on the 2D images.

15. The system of claim 13, wherein the recognition device includes:

means for calculating corresponding 3D coordinates based on the 3D motion data;

means for constructing corresponding 3D tracks based on the 3D coordinates; and

means for deriving the corresponding 2D images from the 3D tracks.

16. The system of claim 15, wherein the recognition device further includes means for adjusting the sampling rate dynamically based on the motion speed.

17. The system of claim 15, wherein the means for deriving the corresponding 2D images from the 3D tracks further includes means for mapping the 3D tracks onto a 2D plane to derive the 2D images for handwriting recognition.

18. The system of claim 17, wherein the deriving means further includes means for

deriving 2D projection plane as a plane to which the sum of the distance square of every sampling points is minimal.

19. The system of claim 13, wherein the input device further includes a control circuit, responsive to a user's command, to generate a control signal transmitted to the recognition device indicating the completion of writing a word or character.

20. The system of claim 14, further comprising an output device for displaying the final result of handwriting recognition.

21. A processing system, comprising:

a memory;

an input device, including a 3D motion detection sensor, to generate 3D motion data in response to a 3D motion; and

a recognition device, operable coupled to the memory and in communication with the input device, which is configured to receive the 3D motion data and derive corresponding 2D images for handwriting recognition based on the 3D motion data.

22. The system of claim 21, wherein the recognition device includes means for performing 2D handwriting recognition based on the 2D images.

23. The system of claim 21, wherein the recognition device includes:

means for calculating corresponding 3D coordinates based on the 3D motion data;

means for constructing corresponding 3D tracks based on the 3D coordinates; and

means for deriving the corresponding 2D images from the 3D tracks.

24. The system of claim 23, wherein the deriving means includes means for mapping the 3D tracks onto a 2D plane to derive the 2D images for handwriting recognition.

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